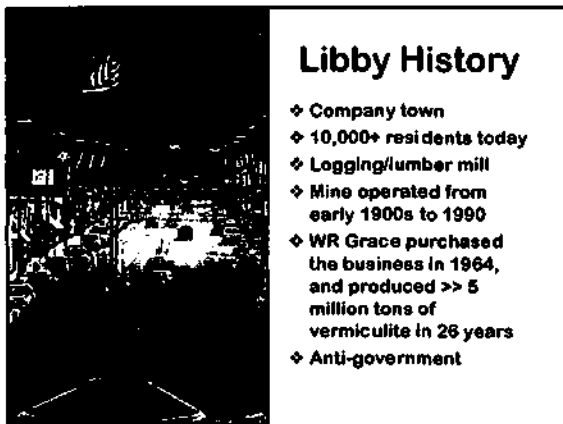
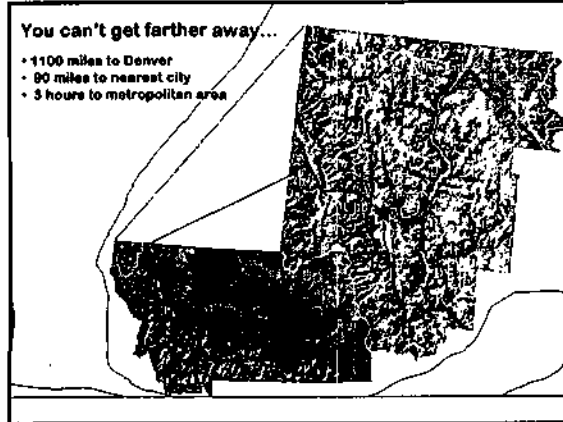




2045194



Libby History

- ◆ Company town
- ◆ 10,000+ residents today
- ◆ Logging/lumber mill
- ◆ Mine operated from early 1900s to 1990
- ◆ WR Grace purchased the business in 1964, and produced >> 5 million tons of vermiculite in 26 years
- ◆ Anti-government

Vermiculite – Lots of Uses

- ✓ insulation - "Zonolite"
- ✓ fertilizer/soil amendment
- ✓ lightweight construction aggregate
- ✓ packing material
- ✓ feed additive
- ✓ anti-slag
- ✓ absorbent

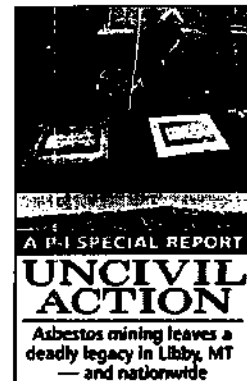


DRY MILLING AT MINE

- 5000 lbs of contaminated dust daily



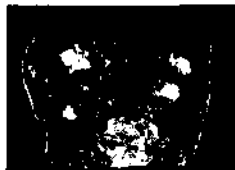
- ◆ Seattle PI broke the story of high death rate in 1999
- ◆ Region 8 ERB responded immediately
- ◆ Originally thought limited to workers
- ◆ Feeling of government betrayal
- ◆ Launched response actions and health assessment immediately





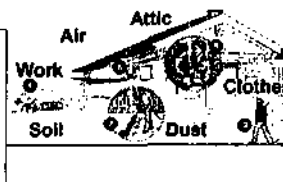
ATSOR HEALTH ASSESSMENT AND MORTALITY STUDY

- Screened over 7000 people
- Roughly 1/8 of population showed lung abnormalities
- Rate of asbestosis 80 times the national average
- Rate of lung cancer 20-30% higher
- Extremely high rate of mesothelioma (expect less than 10 per million, there are several in Libby)
- New pleural disease not like other asbestos disease
- **HUNDREDS HAVE DIED—HUNDREDS MORE WILL**



How did so many get sick?

- At least 16 pathways of exposure
- Mine workers and families – take home
- Playing in vermiculite piles
- Extensive use of vermiculite in town



What is Libby asbestos?

- **Serpentine**
 - Chrysotile



- **Amphibole**
 - Amosite
 - Crocidolite
 - Anthophyllite
 - Actinolite
 - Tremolite

> Libby asbestos

Nearly pure asbestos waste material



Libby asbestos from an insulation sample under electron microscope




EMERGENCY RESPONSE ACTIONS 2000-2002

- ◆ MINE ROAD AND DISPOSAL OPERATIONS
- ◆ SCREENING PLANT AND RAINTREE NURSERY
- ◆ EXPORT PLANT AND BALLFIELDS
- ◆ SCHOOLS AND SCHOOL TRACKS
- ◆ HIGHLY CONTAMINATED RESIDENCES

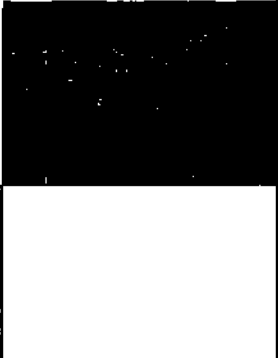
MINE AND MINE ROAD OPERATIONS

- ◆ Set up for soil disposal
- ◆ Large-scale earthwork
- ◆ Permanent decon stations
- ◆ Much of mine road paved to limit exposures and decon




SCREENING PLANT CLEANUP

- ◆ Former processing plant
- ◆ Former nursery
- ◆ Two miles from town
- ◆ Major demolition, soil removal, and restoration
- ◆ 50,000 cubic yards removed




EXPORT PLANT CLEANUP

- ◆ Former processing plant
- ◆ Former lumber business
- ◆ Downtown
- ◆ Adjacent to ball fields and BNSF rail yard
- ◆ Location of vermiculite piles
- ◆ Major demolition, soil removal, and relocation
- ◆ 20,000 cubic yards removed




SCHOOLS AND SCHOOL TRACKS

- ◆ Cleanup at four schools
- ◆ High school & middle school tracks built on vermiculite
- ◆ Restoration and upgrade of tracks



HIGHLY CONTAMINATED RESIDENCES

- ◆ Often pure asbestos rocks used for landscaping
- ◆ Percent levels asbestos in soil
- ◆ Salvaged equipment and waste material from mine and processing



TRANSITION TO LONG TERM RESPONSE 2002

- ◆ Most large scale sources removed – but not all
- ◆ High rate of vermiculite usage in town
- ◆ Transition to cleanup of individual residences and businesses
- ◆ Listed on NPL in 2002 (Governor's pick)
- ◆ 2002 Action Memo to remove vermiculite attic insulation and perform residential cleanup
- ◆ Screening and sampling of 4000 properties – largest single season screening in EPA's history
- ◆ Residential/commercial cleanup begin in late 2002



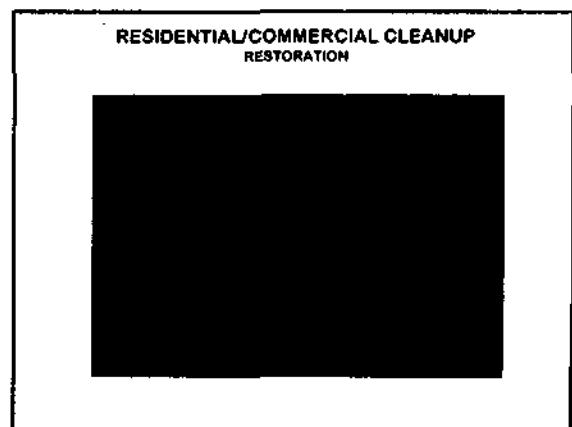
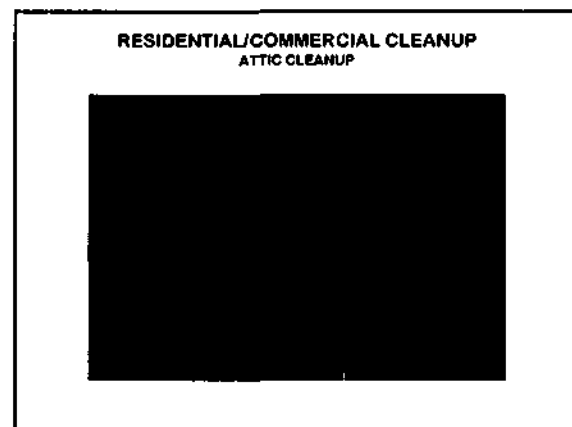
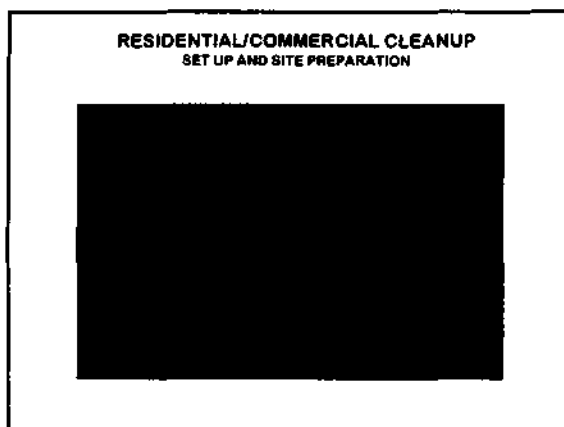

RESIDENTIAL/COMMERCIAL CLEANUP

Cleanup involves...

- > Removal of insulation
- > Removal of building materials
- > Indoor dust cleanup
- > Soil removal
- > Property restoration

Progress....

- > 200+ completed
- > Estimate 1200 additional (very uncertain)



OTHER LARGE SCALE REMEDIAL PROJECTS 2002 →

- ❖ ASBESTOS LANDFILL CELL & MINE OPS
- ❖ BOAT RAMP
- ❖ STIMSON LUMBER MILL
- ❖ BNSF RAILYARD (PRP LEAD)
- ❖ FLYWAY AND CONTIGUOUS PROPERTIES (PRP)
- ❖ INVESTIGATION AND CLEANUP OF MINE AND MINE ROAD (PRP?)
- ❖ INVESTIGATION AND CLEANUP OF TROY (MDEQ LEAD - EPA FUND)
- ❖ OTHERS ARE CERTAIN TO COME

ASBESTOS LANDFILL CELL

- ❖ DISPOSAL OF INSULATION AND DEMO MATERIALS
- ❖ YEAR ROUND OPERATIONS
- ❖ OPENED SPRING 2003
- ❖ LONG-TERM CAPACITY

BOAT RAMP

- ❖ CONTIGUOUS TO FORMER EXPORT PLANT
- ❖ SUBSURFACE CONTAMINATION DISCOVERED AND SPREAD DURING EXCAVATION
- ❖ ABOUT 9000 CUBIC YARDS
- ❖ ALL WORK COMPLETED 2003

STIMSON LUMBER MILL

- ❖ MILL CLOSED IN 2003 RESULTING IN LOSS OF 200+ JOBS
- ❖ COUNTY NOW OWNS PROPERTY TARGETED FOR REDEVELOPMENT
- ❖ CLEANUP OF MAINTENANCE BLDG PLANNED FOR 2004(\$800,000)
- ❖ CLEANUP OF FORMER NURSERY AREA PLANNED FOR 2005

PRP PROJECTS

- ❖ BNSF RAILYARD (2004)
- ❖ FLYWAY (2004)
- ❖ MINE AND MINE ROAD(?)



IMPORTANT SITE ISSUES

- ❖ PRP SITUATION
- ❖ PROJECT TIMING AND SCOPE
- ❖ FUNDING SITUATION AND NEEDS
- ❖ COMPLEXITY OF ASBESTOS SCIENCE
- ❖ CONGRESSIONAL INTEREST
- ❖ REDEVELOPMENT

PRP SITUATION - ENFORCEMENT

- ❖ W.R. Grace in bankruptcy
- ❖ EPA won the largest ever (\$55M+) post trial award under Superfund against W.R. Grace for response costs through 2002. We won't be seeing it anytime soon.
- ❖ Grace not liable for insulation removal
- ❖ Can only do work at Grace owned property
- ❖ "Trial" AOC now - mine later?



PROJECT TIMING AND SCOPE

- ❖ Scope of residential cleanups has expanded beyond expectations - simply more contamination
 - ❖ Early projections = 800 total properties
 - based on limited pre-investigation information
 - Current projections = 1200 properties remaining
 - based on best information available today - may go up
 - ❖ Initial time estimate for residential cleanup = 3 years
- Current estimate is much longer and is dependent on final number of properties and funding from HQ



FUNDING SITUATION AND NEEDS

- ❖ \$110 MILLION SPENT TO DATE
- ❖ FUNDING CURRENTLY EARMARKED FOR RESIDENTIAL/COMMERCIAL CLEANUP AND RELATED SUPPORT - DOESN'T ADDRESS TROY, SOME INVESTIGATIVE WORK, & OTHER UNKNOWNNS
- ❖ BEST ESTIMATE FUNDING/PROGRESS SCENARIOS
 - \$15M / year = 130 properties = 8+ more years of cleanup
 - \$17M / year = 180 properties = 8 more years of cleanup
 - \$18M / year = 240 properties = 4+ more years of cleanup
- ★ NO CONTINGENCIES INCLUDED IN ANY ESTIMATES



Effective budget for 2004

Planned commitment from HQ

Current HQ budget request

WHERE DOES HQ'S MONEY GO?

FIXED COSTS

> ON-SITE STAFF AND OPERATIONS	\$2,400,000
> OVERSIGHT OF CLEANUP WORK	\$5,500,000
> PLANNING/DESIGN/MANAGEMENT	\$2,000,000
> LANDFILL CELL - DISPOSAL	\$ 300,000
> MINE SITE - DISPOSAL	\$ 375,000
> SAMPLE ANALYSIS/INVESTIGATION	\$ 725,000

WHAT IS LEFT OVER ALL GOES TO CLEANUP

> 190 properties x \$30,000 =	\$5,700,000
TOTAL	\$17,000,000

- ★ ANY ADDITIONAL MONEY GOES TO CLEANUP
- A LITTLE EXTRA GOES A LONG WAY BECAUSE BECAUSE FIXED COSTS ARE COVERED



FUNDING SITUATION AND NEEDS

- ❖ HUGE EFFORT TO BALANCE COMMUNITY ACCEPTANCE, PROTECTIVENESS, AND COST EFFICIENCY
- ❖ CONTRACTING ISSUES- FEAR OF LIABILITY
- ❖ EXAMPLE IMPROVEMENTS IN EFFICIENCY
 - 2002 average residential cleanup cost = \$150k per property
 - 2003 average residential cleanup cost = \$60k per property
 - 2004 average residential cost to date = \$40k per property
 - Long term goal = \$30k per property
 - 2001 heavy cleanup (export plant) = \$240 per cubic yard of waste
 - 2004 heavy cleanup (boat ramp) = \$40 per cubic yard of waste



ASBESTOS SCIENCE ISSUES

- ❖ Hard to detect and measure
- ❖ Risk models and regulatory standards outdated
- ❖ Libby asbestos seems more toxic than other forms of asbestos
- ❖ Expensive to manage
- ❖ We are saddled with lots of baggage and unknowns



CONGRESSIONAL INTEREST

- ❖ Senator Baucus/Governor Martz
 - Libby budget and progress
 - Past commitments
 - Superfund tax
- ❖ Others
 - Vermiculite insulation
 - Asbestos relief legislation
 - Asbestos ban



REDEVELOPMENT

- ❖ ECONOMY IS VERY POOR
HIGHEST UNEMPLOYMENT IN MT
- ❖ EPA WORKSHOPS HAVE LED TO
LOCAL EFFORTS
- ❖ FORMER MILL SITE A FOCUS
- ❖ TOWN FEELS EPA IS NOT DOING
ENOUGH

SONS OF LIBBY – VERMICULITE PROCESSING ACROSS THE COUNTRY



- 240 US Vermiculite Processors
- 175 processors used Libby ore
- EPA collected samples at 78 sites
- 23 sites required further action



POTENTIAL TOPICS IN LIBBY

LIKELY....

- ❖ FUNDING AND CLEANUP PACE
- ❖ PRIOR COMMITMENTS BY
EPA MANAGEMENT
- ❖ NEED FOR LONG-TERM HEALTH CARE
- ❖ DESIRE FOR REDEVELOPMENT ASSISTANCE
- ❖ WAGE REDUCTIONS FOR LOCAL WORKERS



POSSIBLE....

- ❖ SCOPE OF RESPONSE – LEAVING ASBESTOS BEHIND
- ❖ PUBLIC HEALTH EMERGENCY
- ❖ LOW DOSE EXPOSURES – NEED FOR ADDITIONAL SCIENCE

QUESTIONS?

